

I claim:

1. A half-bridge inverter for asymmetrical load comprising:
  - a DC power supply connected to the half-bridge inverter,
  - a logic supply providing stabilized low voltage supply source,
  - a first and a second electronically controlled switch,
  - a first and a second voltage divider capacitor,
  - an asymmetrical load connected to the output of the half-bridge inverter,
  - a power resistor connected to an RC filter
  - a first and a second identical drivers connected to the first and second electronically controlled switches,
  - a low power signal transformer having a primary and a first and a second secondary winding,
  - an ignitor unit, having a third electronically controlled switch
  - a current transformer having a first and a second winding,
  - an inductor, having a first and a second winding,
  - a control unit; wherein,
  - the power resistor placed between the half-bridge inverter and the DC power supply, and
  - the logic supply is connected to the control unit, and
  - the first and second drivers are connected to the first and second secondary windings of the low power signal transformer, and
  - the primary winding of low power signal transformer is connected to the control unit, and
  - the third electronically controlled switch is connected to the control unit, and
  - the first winding of current transformer is connected in series with the asymmetrical load, and

the second winding of inductor is connected in series with a high intensity discharge lamp, accomplishing an asymmetrical load, and

the first winding of inductor is connected to the ignitor unit.

2. A half-bridge inverter for asymmetrical load in accordance with claim 1; wherein,  
the said first, and the second electronically controlled switches are MOSFETs, accomplishing a first and a second power MOSFET.
3. A half-bridge inverter for asymmetrical load in accordance with claim 1; wherein,  
the said two identical drivers are MOSFET drivers, accomplishing a first and a second identical MOSFET driver.
4. The first MOSFET driver in accordance with claim 3, comprising:  
a first bridge rectifier, a low power MOSFET, a low power bipolar transistor, a first, a second, a third and a fourth resistor, a diode, and a first capacitor; wherein,  
the AC input of the bridge rectifier is connected to said first winding of said low power signal transformer, and further connected to the first and second resistors, the gate of the low power MOSFET is connected to the first resistor, and the drain of the low power MOSFET is connected to the second resistor and the gate of the first MOSFET, the common anodes of the bridge rectifiers is connected to the source of the low power MOSFET and said first power MOSFET, the common cathodes of the bridge rectifiers is connected to the third resistor connected in series with the fourth resistor, the common point of the third and fourth resistors is connected to the base of the low power bipolar transistor, and further connected to the anode of the diode, the collector of the low power bipolar transistor is connected to the gate of the low power MOSFET, the emitter of the power bipolar transistor is connected to the cathode of the diode, and further connected to an end of the first capacitor, the another end of the first capacitor is connected to the common anodes of the bridge rectifier.

5. An ignitor unit in accordance with claim 1, further comprising:

a second capacitor, a first rectifier, a fifth resistor; wherein,

the said third electronically controlled switch is a third power MOSFET, the first winding of said inductor is connected to an end of the second capacitor and the drain of third power MOSFET, the another end of second capacitor is connected to the source of third MOSFET, the first rectifier and the fifth resistor are connected in parallel, the cathode of the first rectifier is connected to said DC power supply and the anode of first rectifier is connected to the drain of third MOSFET, the gate of the third power MOSFET is connected to said control unit.

6. A current transformer in accordance of claim 1, further comprising:

a second bridge rectifier, a sixth resistor; wherein,

the second winding of said current transformer is connected to the AC input of the second bridge rectifier, the DC output of the second bridge rectifier is connected to the sixth resistor.

7. A control unit in accordance with claim 1, comprising:

a first voltage comparator, a timer unit having an input, a first and a second output, a current limiter, a frequency controller amplifier, a voltage controlled oscillator having an input, and a first and a second output providing symmetrical square wave signals in opposite phase, a first and a second dual input AND gates; wherein,

the input of the first voltage comparator is connected to said DC power supply, the output of the first voltage comparator is connected to the input of the timer, the first output of the timer is connected to the gate of said third MOSFET, the second output of the timer is connected to an input of the dual input AND gates, the input of the current limiter is connected to said sixth resistor, the output of the current limiter is connected to the output of the timer, therefore to the same inputs of the dual input AND gates, the input of the frequency controller amplifier is connected to said RC filter, the output of the frequency controller amplifier is connected to the input of the voltage controlled oscillator, the first and the second outputs of the voltage controlled oscillator are connected to an another input of the dual input AND gates, the outputs

of the dual input AND gates are connected to the primary winding of said low power signal transformer.

8. A current limiter in accordance of claim 7, comprising:

a second voltage comparator, a seventh, an eighth, a ninth, a tenth and an eleventh resistor, a second, a third and a fourth rectifier, a third and a fourth capacitor; wherein,

the input of the current limiter is accomplished by the inverting input of the second voltage comparator, the output of the current limiter is accomplished by the output of the second voltage comparator, the resistors seventh, eighth and ninth are connected in series, the common point of resistor seventh and eighth is connected to the non-inverting input of the second voltage comparator, the common point of resistors eighth and ninth is connected to the anode of second rectifier, the cathode of the second rectifier is connected to the output of the second voltage comparator, an end of the third capacitor is connected to the first output of said voltage controlled oscillator and the another end of the third capacitor is connected to the tenth resistor, the common point of third capacitor and the tenth resistor is connected to the anode of the third rectifier, an end of the fourth capacitor is connected to the second output of said voltage controlled oscillator and the another end of the fourth capacitor is connected to the eleventh resistor, the common point of fourth capacitor and the eleventh resistor is connected to the anode of the fourth rectifier, the cathodes of the rectifiers third and fourth are connected to the non-inverting input of the second voltage comparator.